THE PREVENTION OF PERINEAL LACERATIONS.*

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THIS paper is not written for the purpose of exploiting any special method for the prevention of perineal lacerations, but rather to call attention to the bearing upon the subject of certain more or less neglected obstetric procedures.

Descriptions of contrivances and maneuvers for application only at the end of the second stage of labor have formed the bulk of the journal literature on the preservation of the perineum for many years, but it is notable that only a very few such measures have secured a position among the accepted obstetric methods. The others have been useless, and some, especially those which consist of manipulations with the rectum and at the vulval orifice, with the possible exception of the little operation of episiotomy, are positively harmful. The fact that no such universal method exists, does not relieve the obstetrician of the obligation which rests upon him. The obstetrician is the general practitioner. He is the benefactor of the gynecologists, but the writings of these gentlemen do not indicate that they appreciate the benefactions, for they continually refer to the obstetrician in terms of reproach for his sins of omission. There are two ways by which the obstetrician can escape this just criticism. He can give more attention to preventive measures and he can do more to repair the injuries at the time they occur. During the last few years tears of the perineal body show upon the surface are generally repaired at once, but vaginal lacerations, often involving the muscles of the pelvic floor, are as frequently neglected. These should not be left to the gynecologist. He is evidently having difficulty with them, if we may judge by the frequency with which new operations for their repair are described in the journals.

There are considerations which tend to prevent the prophylactic side of the subject from receiving the care that it should. The general practitioner considers obstetrics the burden of the profession. It is poorly paid and he has been accused of neglecting it on that account. Certain it is that the gynecologist is better paid for repairing the damage than the obstetrician is for preventing it, or for immediately repairing it.

As a matter of fact, barring careless instrumentation, severe perineal and vaginal lacerations (the ones which present difficulty in the immediate repair), are nearly always caused by some abnormality in position or in presentation, or in disproportion between the child and the maternal pelvis. It behooves the obstetrician to study each case with care and render the proper artificial aid at any and all points where nature fails to preserve the normal mechanism. He should even remember the possibility of disproportionately large babies when he is giving the pregnant patient her first instructions at the time she acquaints him with her condition. The usual history should be taken and special attention given to the character of previous confinements. If she has had children of over average weights, she should be given instructions regarding the proportions of the foodstuffs which should be present in her diet to rectify this tendency. I am satisfied from my own experience that much can be done along this line, and that much will be done as soon as the profession becomes divested of the belief that any restriction of the mother's diet is attended with danger to the child. Williams (1) crediting the investigations of Prochownick and Florschutz states that a diet poor in carbohydrates and fluids exerts a marked influence upon the weight of the child without otherwise affecting it, and in not a few cases these precautionary measures may obviate a difficult delivery or even do away with the necessity for the induction of premature labor. I always advise a restricted diet to patients who have borne excessively heavy babies, to those who have slight pelvic contractions, and to all primiparæ. The carbohydrates and fluids are greatly decreased, fruits are allowed in large quantities and the proteids are little if at all diminished. I have seen several babies of under average weights which I believe I am justified in ascribing to such dietetic treatment of the mother, and in each instance the delivery occurred without lacerations and was not unduly rapid. Furthermore, the children were strong and their weights between the fifth and sixth months exceeded the normal proportion of twice that at birth.

I am fully aware that investigations as to the dietetics of pregnancy are insufficient to establish it upon a thoroughly scientific basis, but enough is known to warrant the belief that more exact knowledge favorable to this kind of treatment, will be gained. As one investigator (2) remarked, we know enough to be sure that a relationship *does* exist between the nourishment of the mother and the development of the fetus, and between the condition of the mother and the character of the confinement, and this being so it is as justifiable to attempt to influence the character of the labor through the nourishment of the mother as it is to administer chloroform, ether or narcotics to ease the labor pains.

I would say nothing about the management of normal first and second vertex positions in the second stage were it not for the high percentage of lacerations authors give for all labors. It is generally stated as 30 to 40 per cent. As 90 per cent of all labors are normal so far as position of child and length of labor are concerned, the proportion of tears for this class of cases is al-

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together higher than need be. The technique, as usually taught, should accomplish much better results than this. The two cardinal points in the management are first, the maintenance of flexion until the occiput has reached the lowest possible point below the pubic arch; and second, chloroform anesthesia to the surgical degree when the head is about to extend. The posture of the patient is important, as it must be one which will afford the operator complete control of the advancing head. This is utterly impossible with the patient in the dorsal position lengthwise of the bed. There are only two proper positions and these are the left lateral, and the dorsal-across-the-bed, with the hips at the edge and the legs held by two assistants. The left lateral position is decidedly the more practicable. With the patient in this position, the hips at the very edge of the bed and the legs partially flexed, the operator controls the advancing head with the fingers of the left hand on the occiput, reached by passing his left hand over the patient's abdomen, and between the thighs from the front. His right hand is idle, but ready to assist when extension is about to take place. If the perineum is not firm enough to hold back the sinciput, and thus keep the head flexed until the occiput is sufficiently advanced below the pubic arch, the right hand should assist by exerting some pressure over the anus. No pressure should be exerted over the perineum itself between the anus and vulva and no manipulation of the vulva orifice is allowable. When the prominence of the occiput has been delivered beyond the pubic arch, the heel of the hand is placed between the tip of the coccyx and the anus and the head crowded forward with due regard for the integrity of the tissues about the clitoris. This pressure behind the anus will produce extension, which must proceed slowly and be controlled perfectly by the left hand on the occiput. At this time the best results are obtained when the perineal muscles are relaxed as much as possible by complete chloroform anesthesia. There need be no fear of *post partum* hemorrhage after this use of chloroform. If, however, there is any reason why chloroform cannot be given, the head should be extended and delivered between the pains. The shoulders are carefully delivered by allowing the anterior one to pivot against the pubic bone after rotation, while the posterior is delivered. This method with the natural lubricant should not be attended with more than 10 or 12 per cent of lacerations, and it should be rare for one of these to be beyond the first degree. I am tempted to say that a complete laceration need never occur under such conditions. Such minor lacerations, with two or three silk-worm gut sutures heal very nicely; as well perhaps as clean perineal or episiotomy incisions.

The operation of episiotomy is, however, deserving of some consideration in a paper such as this. It would be of greater value if it were possible to know in any given case that laceration is inevitable. If properly performed, it will cause no harm, and if done whenever the operator feels certain that his other measures will fail, it will be sure to prevent some bad tears. It should be done according to Dickinson's (3) directions. The cuts about one inch long and a quarter inch in depth, severing the resisting band which is felt about one-half inch within the tense edge of the vulva. The important point in the operation is to make the cuts parallel with the long axis of the woman's body, and not at right angles to the edge of the vulva as it is being distended by the head. As usually performed, the posterior ends of the incisions are found after labor to approach each other on the posterior wall of the vagina, thus enclosing a triangular space containing the perineal body. In that case, the damage might be as great as in the ordinary second degree tear, and involve the same structures. Instead of approaching each other, the incisions should be found to be parallel after labor. They are easily united with running sutures of fine catgut.

Twitchell lays great stress upon the preservation of the natural lubricant during the process of the labor. If this slippery material is repeatedly removed by too frequent digital examinations, or by douches, perhaps containing astringent antiseptics, the head will not slide as it should on the perineum, but will push it forward, thereby diminishing the distance from the tense edge to the pubic arch and favoring laceration. Hot douching during the first stage is sometimes recommended to relieve spasm of the cervix, and to increase uterine force. The cervix will dilate if the head advances properly flexed through the superior strait; and if the position and pressure are incorrect, no amount of douching will assist the cervix to dilate. The uterine force can be augmented by better means than the hot douche. It is quite customary when forceps are to be used to scrub out the vagina carefully with a piece of antiseptic soap and then copiously douche with lysol or creolin solution, which is supposed to replace the natural lubricant washed out. It will not do so. Asepsis is necessary, and operative interference has generally been held to be an indication for douching, but Bretschneider's often quoted study seems to disprove it. Of 256 operative cases 119 were douched during labor, and 35 per cent had some fever, while of 135 not douched 29 per cent had fever. If douching is not necessary, then, to secure asepsis, its only effect is the deleterious one of washing out the natural lubricant just before the forceps are applied, when it is most needed.

In the 10 per cent of abnormal labors, assum-

ing that that is about the usual proportion, the common causes of delay are abdominal inertia, overgrowth of the child and arrested posterior positions of the vertex, all of which have the effect of prolonging the second stage, and thus materially increasing the danger of injury to the structures in the pelvic floor. These conditions will generally demand the use of forceps, and the manner of their use is of great importance to our subject.

Beatty of Dublin in the early part of the last century was challenged to fight a duel for writing a paper in which he stated that the proper and timely use of forceps was unattended with danger to the child or mother. It is a well recognized fact that in protracted second stages many lacerations can be prevented by extracting the head with instruments before the vagina has become bruised and dry. One author says it is a good rule not to use forceps in a primipara until she has been twenty-four hours in labor, nor in a multipara till she has been in labor twelve hours. The time element in the indication for forceps has reference to the second stage, and not to the total number of hours the patient has been having labor pains. It is a better rule to assist with forceps if distinct and continuous progress is not made within two or three hours after the cervix is fully dilated. If careful, slow and intermittent traction in the axis of the canal extending over at least twenty minutes, and with out douching the vagina, be made at this time, the results to the maternal soft parts will be far better than they will if the head be allowed several hours longer to mold through the pelvis.

In regard to forceps, I wish to urge the use of the axis traction instrument. I am convinced that it should be used, as advised by Milne Murray, in every forceps extraction, whether the head be at the superior strait or at the pelvic outlet. It is only half-heartedly recommended by American authors for the medium or high operation. It is of as much or more use when the head has reached the pelvic floor. With it, extension will never be begun until the occiput has been brought below the pubic arch. It should not be removed until the whole head is born. I have seen at least two tears into the rectum made by improper traction with Elliott's forceps in the hands of men who had used them many times before. It may be argued that this was not the fault of the forceps, but if they are so often used wrongly they should be discarded for an instrument which has its own indicator for proper traction, attached. Many operators will decide that their traction has never been perfect after their first use of an axis traction instrument. The objection seems to be that it is complicated, cumbrous and hard to use. If this objection is valid when applied to the Tarnier forceps, it is not valid with the one known as Neville's. It is commonly used in Ireland, and has been preferred at the Rotunda in Dublin for a number of years. The blades are of the Barnes shape, and have Neville's apparatus attached. The traction apparatus is entirely outside the vagina when the forceps are applied, and it can be detached in an instant when desired. There is an arrow indicator at the joint in the traction rod which is parallel with the Fenestra of the blades, and when the force is exerted in a line with the arrow, true axis traction is the result. I believe that this instrument will save many a perineum if used instead of the ordinary forceps.

Among the various abnormal positions which may become factors in the causation of bad tears I have encountered the occipito-posterior most frequently. If this position be found, the probability is that the labor will be long, that the soft parts will become edematous, that the lubricating secretion will be absent, and that the great distention of the perineum when delivery is accomplished with forceps, by overflexing the head and then extending it, will result in extensive injury to the soft parts. I have managed eight persistent occipito-posterior positions in this manner, and while none of the children were injured, the effect on the perineum was not satisfactory. No complete ruptures occurred, but lacerations to the second degree were generally present. The treatment which seems to be attended with the best results is anterior rotation with forceps. The textbooks unanimously condemn it, but they offer nothing which gives anything like the results reported by those who use it. The American Text-Book states that it rarely succeeds and is capable of serious injury to the child, but Richard C. Norris (4), the editor of the book, rather enthusiastically recommends it in other writings, and his detailed description of the technique I would recommend to those who, like myself, are not satisfied with direct traction and wish to try it. Brodhead (5) and others of New York advise and practice it, and report excellent results. Briefly, the method is to bring the head to the pelvic floor, if it is not already there, with an axis traction instrument, and then rotate the occiput to an anterior position, preferably with the Tucker solid-bladed forceps. To prevent lacerations of the vaginal walls, the tips of the blades must be kept in the axis of the canal, and this is done during the rotation, by deviating the handles of the forceps in the direction toward which the concavity of the pelvic curve of the instrument is directed. The head is held in the new position until the body rotates, and then the forceps are re-applied to the sides of the head and delivery completed. Of course this procedure is only applicable when the longest diameter of the head has passed the superior strait. If the head will

not engage at the brim, the true high forceps operation would be necessary, and that I believe to be bad practice. Version is to be preferred.

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2. Prochownick. *American Gynecology*, October, 1902.
3. Episiotomy. *American Text Book of Obstetrics*, 2d Edition, Vol. I, p. 424.
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5. Brodhead. *American Journal of Obstetrics*, December, 1900.

DISCUSSION.

Dr. Z. Malaby, San Francisco—There is very little left to be said about this paper of Dr. Ewer's. He has covered the subject very completely and I heartily agree with him in everything except the last—rotation of the head with the forceps. With the right hand make strong pressure against the head during the pains. I frequently hold the head for fifteen or twenty minutes and cannot help but notice the good results of each pain by this method. From the doctor's paper I would infer that he would give chloroform in all cases while the head is passing over the perineum, especially the likelihood of a tear. I would like to ask if he always follows that method? About three years ago this subject was brought up for discussion, and some advocated lubricant oils. I think that nature helps more than all else in these cases. The tear in the perineum is caused from the shoulders; very often when the head is being delivered, the two shoulders are presented at the same time. I have frequently seen tears caused from this. I therefore, after the head is delivered, if the cord is not around the neck, see that one shoulder is pushed back and the other one delivered. Regarding the rotation of the head with forceps, it takes an expert to rotate the head in that way and not lacerate the head in several places. In a well equipped hospital or an up-to-date house with a physician who has had considerable experience in using the forceps, it may be a good procedure, but as a general routine, I certainly would not advocate it for rotating the head.

Dr. W. N. Sherman, Fresno—I want to speak of one point in regard to the delivery of the shoulders. After the head is delivered and the rotation has taken place, the head should always be elevated with the hand, and the upper shoulder held back behind, while the lower one is born. This is the method I have adopted for many years and have saved many accidents in that way.

Dr. F. P. Topping, San Francisco—I would like to say one thing advocating the left lateral position. It is used entirely at the Rotunda Hospital, Dublin. When the head is on the vulva the parts are pressed back, therefore we can further aid the distention of the outlet. In some cases we get very good results by using a pad at about 118° kept constantly on the perineum between the anus and the vulva. There was one other point about the axis traction. In Dublin they never use long or straight forceps; it is always the Nevel's forcep. The advantage is that the axis traction is entirely without the pelvis. It is very low down and there is only one point to watch and that is the arrow indicator which, kept within a certain line, will always give true axis traction.

Dr. A. S. Parker, Riverside—I would like to speak of the use of the ordinary forceps to get axis traction. In place of taking the handles, I slip my finger between the blade, catching them higher, and with good strength in the hands you can use traction on most forceps by catching them high up. In any ordinary case you can get as much traction as is necessary. You have much better control of the movements of the head than pulling.

Dr. D. A. Hodghead, San Francisco—There were so many excellent things in the papers that it is hard to discuss them. There is one subject I would call attention to and that is in regard to the delivery of the shoulders. I believe myself that the shoulders are the cause of lacerations of the perineum. Frequently after the head has been delivered, the perineum relaxed and the body allowed to rotate in the anterio-posterior position, the obstetrician places one finger in the axilla and the shoulder plows its way through the perineum. One way to prevent that is to prevent the extreme rotation of the body. Remember the various mechanisms of flexion and rotation of the occiput to the front and after extension then external rotation. The occiput should be allowed to come back to about the position already occupied. If you permit the head to rotate too far, then you have the shoulders in the anterior posterior diameter. But if you permit it to rotate so that it occupies the position it did and the shoulders come down in that diameter, they do not rotate to the extreme and instead of passing over the central portion, pass to the right of the perineum.

Dr. J. Maher, Oakland—From my experience my belief is that if perineal lacerations occur it is after the head has been delivered. I think the shoulder is responsible for this. When the head is delivered, the whole weight of the child comes upon the shoulder. I believe the way to prevent this is by taking hold of the head with the left hand and at the same time support the perineum with the right hand.

Dr. E. N. Ewer, Oakland—Dr. Malaby asked if I would use chloroform in all cases. I certainly would to a moderate degree in every case, whether there are lacerations or not, principally to save the woman pain. I have delivered many cases that way. In regard to Dr. Malaby's criticism as to rotation of the head in anterior occipital rotation, one reason I rotate the head in that way is to prevent laceration. I have never used that method until recently. I recommend it principally from the writings of well-known men whom I have studied very carefully. Recently I have had occasion to use it and was astonished at the ease of it.

INFECTIOUS PULMONARY EDEMA.

PRELIMINARY REPORT.*

By W. OPHÜLS, M. D., San Francisco.

WHILE I was studying mixed infections in pulmonary tuberculosis, I met with a condition which, to the naked eye, had all the appearances of an acute pulmonary edema such as we are accustomed to see in cases of disturbance of the circulation in the lungs. It nearly always occurred in the posterior lower parts of the lungs, and involved large parts of the lower lobes in a diffuse manner; the pleura over the affected parts had a smooth, shining surface. The cut surface was dark red, often clearly bluish in color, and smooth. On pressure a clear, slightly blood-stained foamy fluid was discharged from the pulmonary tissue. There was an increase in consistency of the lungs, but not enough to speak of a consolidation. On microscopical examination one found in these cases a marked hyperemia of the septa, the air spaces more or less filled with coagulated fluid, desquamation of the alveolar epithelium, no or very few polymorphonuclear leukocytes, and in other words, a typical edema. Yet when one stained the specimens for bacteria, the edematous fluid was found to contain them in

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